Chapter 4
Legal and Regulatory Landscape of Blockchain Technology in Various Countries

Karisma Karisma
University Malaya, Malaysia

Pardis Moslemzadeh Tehrani
https://orcid.org/0000-0001-9698-8698
University Malaya, Malaysia

ABSTRACT

Blockchain technology can be leveraged to record information securely, ranging from public sector data to private records. It has the potential of being ubiquitous due to its far-reaching use cases and revolutionary features. The deployment of blockchain technology can radically transform corporate and government operations and services. The blockchain legislative landscape is rapidly evolving, and an in-depth analysis is provided to offer a legal and contextual perspective of the regulatory trends across the globe. Part I explores the widespread use of blockchain technology for various industries and business applications. It also outlines two types of legislation that can be enacted, namely enabling and prohibitive legislation, to advance the policy objectives of a country. Part II examines the regulatory responses of various countries relating to blockchain use cases and applications.

INTRODUCTION

The utilization of blockchain technology has expanded beyond the realm of digital currencies, permeating into other domains. This occurrence has triggered a regulatory response from various jurisdictions. Blockchain technology is envisaged to be ubiquitous and has the potential to disrupt business practices. It is pertinent to consider regulatory solutions as blockchain technology is further developed and leveraged for far-reaching applications. This chapter expands on academic literature and navigates the regulatory landscapes beyond digital currencies, namely other blockchain use cases and industry applications.

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As the regulatory apparatus is evolving significantly, it is apt to embark on a discussion relating to the regulatory initiatives that have been adopted by various countries, to facilitate the implementation and deployment of blockchain technology. Several states in the United States (US) and other countries have either proposed or enacted laws and regulations that address blockchain technology. Part I explores the widespread use of blockchain technology for various industries and business applications. It also outlines two types of legislation that can be enacted, namely enabling and prohibitive legislation, to advance the policy objectives of a country in the area of blockchain. Part II examines the regulatory responses of several countries relating to blockchain use cases and applications. This chapter highlights four types of regulatory approaches that can be adopted by various countries, namely (a) wait and see; (b) enacting new legislation; (c) issuing guidance; and (d)regulatory sandboxing. A descriptive method is adopted in Part I and II of this chapter. This chapter also serves as a blueprint for future work in conducting a comparative analytical study on the regulatory initiatives of each country.

BACKGROUND

Blockchain technology is a tamper-proof digital ledger that records data, transactions, and digital assets in a distributed manner without the need for central authorities or intermediaries to process and validate the data. (Suda et al., 2017) Therefore, unlike a centralized system, the decentralized structure of blockchain is not susceptible to a single point of failure nor responsible for the entire task as the workload is distributed to the "computing nodes".(Raj et al., 2020) Every node maintains the same encrypted copy and can "record, store and update" the ledger. (Furlonger & Uzureau, 2019; Quasim, 2020) The decentralized structure ensures transparency, anonymity and efficiency of the blockchain ecosystem. (Bashir, 2018) Besides that, consensus mechanisms are utilized in blockchain to deal with "faults" in a distributed system, to ensure that all the participating nodes provide an agreement towards a single source of truth. (Bashir, 2018) The participating nodes on the blockchain network maintain and rely on the same distributed ledger, which functions as a "golden record" and is immutable. (Suda et al., 2017) The immutability of blockchain suggest that transaction data located on blockchain networks are tamper-evident in that they cannot be eliminated or altered easily. (Politou et al., 2019) The term "immutable" means "perpetual after some time or unfit to be changed". (Kumar et al., 2020) In the realm of blockchain, this term is interpreted as "practically immutable, for all intent and purposes", and immutability can be achieved with the assistance of a "cryptography hash value". (Kumar et al., 2020; Raj et al., 2020) Blockchain technology was first proposed by Satoshi Nakamoto in 2008 where a paper on bitcoin was published. (Nakamoto, 2008) The paper suggested an electronic payment system that allows payment to be made from one willing party to another, directly without reliance or interference from third-party intermediaries. (Hughes, 2017; Suda et al., 2017)

The more prominent and notable applications of blockchain technology are cryptocurrencies. These applications rely on the extensive capability of blockchain systems to "record, transfer and store data" in a secure manner. (Hughes, 2017) Currently, blockchain technology is utilized in various domains such as the energy trading sector, health care sector, supply chain management, and financial services. Countries have begun to explore the use and implementation of blockchain technology and whether the technology should be regulated, including the manner to regulate it. Scholar Benedetto Neitz outlined two reasons for regulating blockchain technology. (Neitz, 2020) Firstly, it protects members of the public from harm. Cryptocurrency has led to a surge of scams in the past years. Scammers continue to find